

JUN 29 1995

ENGINEERING DATA TRANSMITTAL

0042236

1. EDT

Page 1 of 1

610048

2. To: (Receiving Organization) SAMPLING OPERATIONS		3. From: (Originating Organization) TWRS/CHARACTERIZATION PLANS, COORDINATION AND REPORTS		4. Related EDT No.: N/A							
5. Proj./Prog./Dept./Div.: TWRS ENG/CPR		6. Cog. Engr.: J. Jo		7. Purchase Order No.: N/A							
8. Originator Remarks: FOR ORIGINAL RELEASE				9. Equip./Component No.: N/A							
				10. System/Bldg./Facility: TANK FARMS							
11. Receiver Remarks:				12. Major Assm. Dwg. No.: N/A							
				13. Permit/Permit Application No.: N/A							
				14. Required Response Date: 6-28-95							
15. DATA TRANSMITTED											
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Trans- mittal	(H) Origina- tor Dispo- sition	(I) Receiv- er Dispo- sition			
1	WHC-SD-WM-TP-366		0	TANK 241-T-106 TANK CHARACTERIZATION PLAN	Q	1,2	1				
16. KEY											
Approval Designator (F)		Reason for Transmittal (G)			Disposition (H) & (I)						
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)		1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)			1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged						
(G)	(H)	17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)						(G)	(H)		
Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
2	1	Cog.Eng. J. Jo	<i>J. Jo</i>	6-28-95							
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18.		19.		20.		21. DOE APPROVAL (if required) Ctrl. No.					
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BD-7400-172-2 (04/94) GEF097

BD-7400-172-1

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Document Number: WHC-SD-WM-TP-366, Rev. 0

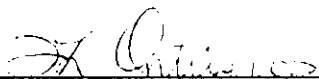
Document Title: Tank 241-T-106 Tank Characterization Plan

Release Date: June 29, 1995

**This document was reviewed following the
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SUPPORTING DOCUMENT

1. Total Pages

7

2. Title

Tank 241-T-106 Tank Characterization Plan

3. Number

WHC-SD-WM-TP-366

4. Rev No.

0

5. Key Words

Tank 241-T-106, Auger Sampling

6. Author

Name: Jaiduk Jo

Signature

Organization/Charge Code 75310/MDR21

7. Abstract

N/A

8.

RELEASE STAMP

OFFICIAL RELEASE
BY WHC

DATE JUN 29 1995

WS 4

19

Tank 241-T-106 Tank Characterization Plan

Prepared for the U.S. Department of Energy
Office of Environmental Restoration
and Waste Management

by

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LIST OF ABBREVIATIONS

DOE	Department of Energy
DQO	data quality objective
DST	double-shell tank
RCRA	Resource Conservation and Recovery Act
SST	single-shell tank
T-106	Tank 241-T-106
TCP	Tank Characterization Plan
TWRS	Tank Waste Remediation System
WHC	Westinghouse Hanford Company

1.0 INTRODUCTION

This Tank Characterization Plan identifies the information needed to address relevant issues concerning short-term and long-term safe storage and long-term management of single shell tank 241-T-106 (T-106). It should be understood that the various needs and issues surrounding tank T-106 are evolving as new information about the tank is uncovered. As a result of this progression, this Tank Characterization Plan addresses only the issues that, to this date, have been identified. It is expected that deviations from this plan may occur as additional issues or needs arise which impact the management of tank T-106. As necessary, this Tank Characterization Plan will be revised to reflect those changes or deviations.

A sludge sample from tank T-106 was analyzed in 1975. The results from this analysis can be found in "Analysis of 106-T Sludge Sample" (Horton 1975). Historical process knowledge identifies this tank as a non-Watch List tank. Near-term sampling and analysis activities are focused on either verification of the non-Watch List tank status or identification of any unknown safety issues associated with the tank. Should any safety issues be identified, additional analysis will occur consistent with the identified issue.

In addition to the resolution of any safety issues, it is intended that all tank waste will be subject to pretreatment and retrieval to prepare for final storage or disposal. Presently, these long-range plans have yet to be fully identified and are, therefore, not included in this document.

2.0 PROGRAM ELEMENTS REQUIRING INFORMATION FOR TANK 241-T-106

This section identifies the various program elements, and identifies which of these programs require characterization data from tank T-106.

2.1 GENERAL SAFETY ISSUES

Tank T-106 entered service in 1947 when it was filled with second cycle decontamination waste. In 1973, the tank was declared an assumed leaker and was removed from service. Interim stabilization and isolation were completed in 1981. In 1984, stabilization was completed. Presently, the tank contains 71.9 Kl (21 kgal) of non-complexed waste, which corresponds to a waste depth of 7.9 cm (3.1 inches). Based upon the Tank Layer Model (Agnew 1995), tank T-106 is expected to have two primary layers: a sludge layer composed of REDOX coating waste and second-cycle decontamination waste, followed by a top layer of supernate.

Tank T-106 is identified as a non-Watch List tank, that is passively ventilated, and is categorized as an assumed leaker with interim stabilization and intrusion prevention completed (Hanlon 1995). These classifications are based on historical process knowledge and the Waste Status and Transaction Records (Agnew 1994). Near-term sampling and analysis activities are focused on either verification of the non-Watch List tank status or identification of any safety issues associated with the tank. Should any safety issues be identified, additional analysis will occur consistent with the identified issue.

The *Tank Safety Screening Data Quality Objective* (Babad and Redus 1994) describes the sampling and analytical requirements that are used to screen waste tanks for unidentified safety issues. The primary analytical data needs for the safety screening of a tank are energetics, total alpha activity, moisture content, and gas concentration.

2.2 SPECIFIC SAFETY ISSUES

2.2.1 Ferrocyanide

This tank is a non-Watch List tank, therefore, no information needs are currently identified for this program element.

2.2.2 Organic

This tank is a non-Watch List tank, therefore, no information needs are currently identified for this program element.

2.2.3 High Heat

This tank is a non-Watch List tank, therefore, no information needs are currently identified for this program element.

2.2.4 Flammable Gas

This tank is a non-Watch List tank, therefore, no information needs are currently identified for this program element.

2.2.5 Vapor

The tanks currently scheduled to be vapor sampled may be classified into four categories: (1) those tanks which are to be rotary mode core sampled (as a consequence of the rotary sampling system); (2) tanks on the Organic or Ferrocyanide Watch Lists; (3) tanks in C farm; and (4) tank BX-104, due to vapor exposure. Since tank T-106 is not categorized in one of the above four groups, no information needs are currently identified for this program element.

2.2.6 Criticality

No information separate from that for the general safety issue of tank T-106 are currently identified for this program element. However, if the general safety screening of tank T-106 identifies a potential criticality concern, analyses for fissile materials and neutron sorbers and poisons will be performed as identified in the safety screening data quality objective.

2.3 CONTINUING OPERATIONS

2.3.1 Compatibility/Stabilization

No information needs are currently identified for this program element.

2.3.2 Evaporator

No information needs are currently identified for this program element.

2.4 DOUBLE-SHELL TANK WASTE ANALYSIS PLAN

No information needs are currently identified for this program element, although work to identify these needs is in progress and expected to be completed in fiscal year 1995.

2.5 DISPOSAL

2.5.1 Retrieval

Long-range planning for disposal needs are currently under development as testing for bounding tanks is performed. Tank T-106 is not identified as a bounding tank; therefore, short-term data needs do not include tank T-106.

2.5.2 Pretreatment/Vitrification

Long-range planning for disposal needs are currently under development. Short-term data needs do not include tank T-106.

3.0 HOW INFORMATION WILL BE OBTAINED

The safety screening DQO requires that a vertical profile of the tank waste be obtained from at least two widely spaced risers. This vertical profile may be obtained using core, auger (for shallow tanks), or grab samples. For tank T-106, the auger sampling method was chosen based on a waste depth of less than 20 inches and expected solid sample. Auger sampling is appropriate and should allow a full vertical profile to be obtained.

4.0 PRIORITY OF INFORMATION REQUIREMENTS

Identification of unknown safety issues is a high priority for this tank. Sampling is expected to be performed in fiscal year 1995.

Table 4-1: Integrated DQO Requirements

Sampling Event	Applicable DQOs	Sampling Requirements	Analytical Data Needs
Auger Sampling	►Safety Screening DQO	Auger samples from at least 2 risers separated radially to the maximum extent possible	►Energetics ►Moisture Content ►Total Alpha

5.0 REFERENCES

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